

GROWN UP™...

A Newsletter For Those Who Care For ADOLESCENTS, ADULTS AND AGING ADULTS

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© INHALANT ABUSE... AN ADOLESCENT EPIDEMIC

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Behavioral Objectives: After reading this newsletter the learner will be able to:

1. Identify inhalant abuse and who is at risk for this form of substance abuse.
2. Discuss effects on the body and assessment findings of inhalant abuse.

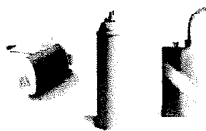
Most adults, including healthcare providers, are unaware about the popularity and dangers of inhalant abuse. But teens are discovering that common household products are inexpensive to obtain, easy to hide and the easiest way to get high. According to national surveys, inhaling dangerous products is becoming one of the most widespread problems in the country. More than a million Americans, predominantly adolescents, use inhalants.

This newsletter will identify inhalant abuse and who is at greatest risk for this form of substance abuse. Effects on the body and assessment findings of inhalant abuse will be discussed, as well as implication for the healthcare provider.

WHAT IS INHALANT ABUSE?

Inhalant use, or the slang terms - huffing, sniffing, snorting or bagging, refers to the intentional breathing of gas or vapors with the purpose of reaching a high. Inhalants are breathed in through the nose or mouth in a variety of ways. Abusers initially inhale deeply, followed by taking several more shorter breaths.

Abusers may inhale by huffing chemical vapors directly from open containers or by huffing fumes from rags that are soaked in a substance and then held to the face or stuffed in the mouth.



Other methods include spraying aerosols directly into the nose or mouth or pouring inhalants onto the user's collar, sleeves, or cuffs and sniffing them over a period of time, such as during a class in school. In a practice known as bagging, fumes are inhaled from substances sprayed or deposited inside a paper or plastic bag. With bagging, exhaled air is re-breathed and resulting hypoxia and hypercapnia may add to the disorienting effects of the solvent. Aspiration and asphyxia from plastic bag use are contributing factors to mortality from inhalant abuse. The fumes may also be discharged into small containers, such as soda cans, and then inhaled from the can.

There are more than 1,000 products that are dangerous when inhaled. The chemical compound, toluene, an industrial solvent, is found in the most commonly abused inhalants.



COMMON PRODUCTS USED AS INHALANTS

Adhesives

model airplane glue, rubber cement, household glue

Aerosols

spray paint, hairspray, air freshener, deodorant, fabric protector

Solvents and gases

nail polish remover, paint thinner, type correction fluid and thinner (White Out®), toxic felt tip markers, butane - lighter fluid, gasoline and exhaust, carburetor cleaner, octane booster, air-conditioning refrigerant

Cleaning agents

dry cleaning fluid, spot remover, degreaser, oven cleaner

Food products

vegetable cooking spray, dessert topping spray (whipped cream)

Gases

nitrous oxide, butane, propane, helium

WHO IS AT RISK?

An estimated 3-4% of American teenagers engage in sniffing on a regular basis and 7-12% of high school students have tried huffing at least once. And, the incidence in young people is believed to be rising. By the time a student reaches the 8th grade, one in five will have used inhalants. Inhalant abuse often appears before the onset of tobacco or alcohol use. Experimental use commonly first occurs in late childhood & early adolescence, when use patterns are short lived. Chronic use appears in early & late adolescence.



Experimental use is equally common in males and females, but chronic use and morbidity and mortality are most common in males. Most acute cases occur in young males, ages 11-19 years, who participate in huffing as a group activity. Statistics show that young, white males have the highest usage rates. Hispanic and American Indian populations also show high rates of usage.

Users can get high several times over a short period because inhalants are short-acting, but have a rapid onset. Inhalant abuse is especially attractive to teens who, characteristically, don't like delayed gratification. Additionally, products abused are legal, readily available, inexpensive and easy to hide.

Street Terms for Inhalants

Amys	Bang	Bolt
Boppers	Bullet	Climax
Glading	Gluey	Hardware
Head cleaner	Hippie crack	
Kick	Locker room	
Poor man's pot	Poppers	
Rush	Snappers	

This newsletter is intended only as a guide when caring for patients... use your professional judgment.

WHAT INHALANTS DO TO THE BODY

Inhalants are physically and psychologically addicting and users suffer withdrawal symptoms, which may last for weeks. Nearly all inhalants produce effects similar to anesthetics, which slow down the body's function. Varying upon the amount inhaled, the user can experience slight stimulation, a feeling of less inhibition or loss of consciousness. The user can also suffer from Sudden Sniffing Death Syndrome (SSDS). This means the user can die the 1st, 10th or 100th time he or she uses an inhalant. About 22% of those who die from huffing do so the first time they try it. Huffing can also kill quickly in a number of



other ways. Motor vehicle accidents, falls and other traumatic injuries (while high on inhalants) are common. Others die from suffocation, burns, suicide (from the depression that can follow the high), and from choking on their own vomit. Results similar to Fetal Alcohol Syndrome may also occur when inhalants are used during pregnancy. Other effects include damage to the brain, lungs, heart, liver, kidney, and other organs.

BRAIN: Toluene moves into the brain rapidly and initially affects the same brain regions as cocaine and other abused drugs. Then, toluene spreads more generally to the entire brain before clearing the body rapidly via the kidneys. Many inhalants are thought to dissolve the protective myelin sheath that surrounds neurons - brain cells. Cellular death in the cerebral cortex causes permanent personality changes, memory impairment, hallucinations and learning disabilities. Inhalant-related damage of the cerebellum, the center that controls balance and coordination, results in loss of coordination and slurred speech. Chronic abusers experience tremors and uncontrollable shaking.

Toluene inhalation also destroys cells that relay sound to the brain. Chronic abusers can become deaf. It may also affect the ophthalmic nerve, resulting in sight problems, including blindness.

LUNGS: Repeated abuse of inhalants can cause lung damage. Some substances chemically block the oxygen carrying capacity of the blood.

HEART: The main effect on the heart is SSDS, caused by a sudden and unexpected disturbance of the heart's rhythm. All inhalants can produce Sudden Sniffing Death Syndrome.

LIVER: Halogenated compounds like trichloroethylene (a component of aerosol paints and correction fluid) have been linked to damage of this organ.

KIDNEY: Inhalants containing toluene impair the kidney's ability to control the amount of acid in the blood. This is reversible when toluene leaves the body but, in the long-term, kidney stones may develop.

MUSCLE: Chronic inhalant abuse can lead to muscle wasting, reduced muscle tone and strength.

BONE MARROW: Benzene, a component of gasoline, has been shown to be linked to leukemia.

PERIPHERAL NERVOUS SYSTEM: Chronic inhalation of nitrous oxide (whipped cream propellant) and hexane (found in some glues and camp stove fuels) results in damage to the peripheral nerves. Symptoms can include numbness, a tingling sensation or total paralysis.

SKIN: Inhalant contact with skin may cause itching or burns, ranging in severity from dermatitis to extensive chemical burns with necrosis.

ACUTE SIGNS OF INHALANT ABUSE

Toluene intoxication has a presentation similar to alcohol intoxication. Patients with acute toluene poisoning may present with a variety of symptoms depending on the duration and amount of toluene in the vapor or gas that was inhaled.

Sweet smelling odor:

Inhalants gradually leave the body for two weeks following huffing. Twenty percent of inhaled toluene is expired from the lungs, unchanged. The patient's breath, as well as hair and clothing, may have a distinctive sweet smelling odor.

Neurologic

Dizziness and headaches
Decreased level of consciousness
Decreased motor coordination
Uncontrolled fine motor movements



Balance problems

Euphoria

Amnesia

Respiratory distress

Shortness of breath

Cyanosis

Gastrointestinal

Nausea & Vomiting

Abdominal pain

Hematemesis (blood in vomit)

Confusion

Hallucinations

Seizure activity

Tachypnea

Wheezing

Other signs of acute inhalant abuse include paint or stains on the face, hands or clothing. Mucosal irritation - burning mouth, red eyes and throat, is also a common finding.

IMPLICATIONS: Although many parents are appropriately concerned about illicit drugs, such as marijuana and cocaine, they often ignore the dangers posed from inhalant abuse, which is often a gateway to other drug abuse. Parents should be educated about early identification of huffing, such as finding hidden empty spray paint or solvent containers and chemical-soaked rags or clothing.

Preventing huffing is far better than trying to treat an inhalant addiction. Parents should be encouraged to talk with their child about huffing. Although huffing peaks between the ages of 12 and 15 years, it often starts innocently in children only six to eight years old. Education should begin early and occur often.

There is a direct link between inhalant use and problems in school - failing grades, chronic absences and general apathy. However, experts believe school anti-drug programs don't focus on inhalants. In fact, teens report huffing school supplies, such as toxic markers, during class.



Inhalant abuse can cause serious, permanent health problems, as well as death. It is a nationwide problem, yet it often occurs without detection. Healthcare providers play a key role in education to prevent and identify inhalant abuse.

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